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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,266	03/31/2004	Hung-Ming Chien	58268.00356	5386

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EXAMINER

LE, NHAN T

ART UNIT PAPER NUMBER

2618

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,266

Applicant(s)

CHIEN, HUNG-MING

Examiner

Nhan T. Le

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/26/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-10, 13-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Latham, II (US 4,636,748).

As to claim 1, Latham teaches a charge pump circuit to supply current to a controlled oscillating circuit (see fig. 2, col. 3, lines 35-63) the charge pump circuit comprising: a first switch comprising a first state, said first switch coupled to a gate of an output diode (see fig. 2, numbers 11, 12, col. 3, lines 35-63); and a second switch comprising a second state opposite from said first state, the second switch coupled to a source of the output diode, wherein the second switch provides a charge up current to the output diode when the second state comprises an ON state (see fig. 2, numbers 10, 13, col. 3, lines 35-63).

As to claims 2, 3, Latham teaches wherein the first switch comprises a diode having a first semiconductor material (see fig. 3, number 107, col. 3, lines 66-67, col. 4, lines 1-27) and the second switch comprises a diode having a second semiconductor material (see fig. 3, number 108, col. 3, lines 66-67, col. 4, lines 1-27).

As to claims 4, 5, Latham teaches wherein the first switch is coupled to a capacitance wherein the capacitance holds a bias voltage when said second switch comprises the ON state (see fig. 2, number 3, col. 3, lines 35-63).

As to claim 6, Latham teaches wherein the first switch disconnects the gate of the output diode when said first state comprises an OFF state (see col. 4, lines 28-44).

As to claims 7, 8, Latham teaches wherein the first switch comprises an n-channel metal oxide semiconductor and wherein the second switch comprises a p-channel metal oxide semiconductor (see col. 2, lines 19-28).

As to claim 9, Latham teaches a circuit, comprising: a controlled oscillator controlled by an output signal having an offset current (see fig. 2, number 1, col. 3, lines 35-63); a charge pump circuit to add a charge up current to the offset current in response to a signal from a phase/frequency detector (see fig. 2, col. 3, lines 35-63), wherein the charge pump circuit comprises a first switch having a first state (see fig. 2, numbers 11, 12, col. 3, lines 35-63) and a second switch having a second state to add the charge up current to the offset current, in which the first state is opposite the second state; and an output diode coupled to the first and second switches to provide the charge up current to the offset current (see fig. 2, numbers 10, 13, col. 3, lines 35-63).

As to claim 10, Latham teaches comprising a low pass filter coupled between the controlled oscillator and the charge pump circuit (see col. 1, lines 36-54).

As to claim 13, Latham teaches wherein the charge pump circuit includes a time constant applied by the first switch (see col. 4, lines 2-20).

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As to claim 14, Latham teaches wherein a period for the time constant for the first switch is greater than a period for the ON state for the second switch (see col. 4, lines 2-20).

As to claims 15-17, Latham teaches wherein the output diode comprises a p-channel metal oxide semiconductor, wherein a gate of the output diode is coupled to the first switch and wherein a source of the output diode is coupled to the second switch (see fig. 3, col. 4, lines 20-44).

As to claims 18, 23, 26, Latham teaches a charge pump circuit coupled to an oscillating circuit, the charge pump circuit comprising: a current source (see fig. 2, number 14, col. 3, lines 35-63); a source switch coupled to the current source to supply a charge up current (see fig. 2, numbers 12, 13, col. 3, lines 35-63); an output diode having a source coupled to the source switch, wherein the output diode receives the charge up current; and a gate switch coupled to a gate of the output diode to form a circuit to hold a bias voltage from the gate (see fig. 3, up, down, col. 4, lines 20-44).

As to claims 19, 20, Latham teaches wherein the source switch comprises a p-channel metal oxide semiconductor and wherein the gate switch comprises an n-channel metal oxide semiconductor (see col. 4, lines 20-44).

As to claims 21, 22, Latham teaches wherein the source switch comprises a state and the gate switch comprises another state opposite of the state of the source switch (see col. 2, lines 55-67, col. 3, lines 1-21).

As to claim 24, Latham teaches comprising outputting an output current from the output diode, wherein the output current comprises an offset current having the charge up current (see col. 4, lines 1-20).

AS to claim 25, Latham teaches further comprising generating the charge up current in response to a signal received at a charge pump circuit (see col. 4, 1-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11, 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Latham, II (US 4,636,748) in view of Ryu (US 6,430,244).

As to claims 11, 12, Latham fails to teach comprising a multi-modulus divider coupled to the phase/frequency detector and wherein the multi-modulus divider outputs a feedback signal. Ryu teaches a divider coupled to the phase/frequency detector and wherein the multi-modulus divider outputs a feedback signal (see fig. 3, numbers 500, 107, col. 3, lines 13-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Ryu into the system of Latham in order to synchronize the input and feedback signals (see suggested by Ryu col. 3, lines 13-44).

Conclusion

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3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kasahara et al (US 6,714,772) teaches wireless communication system.

Chiu (US 20050156684) teaches charge pump pll having dynamic loop gain.

Ming et al (US 7,064,600) teaches limit swing charge pump and method thereof.

Ausserlechner (US 6,850,111) teaches charge pump circuit.

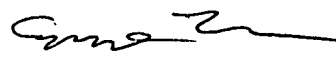
Kudura (US 6,384,668) teaches charge pump circuit.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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